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10/026,319	12/20/2001	Richard Williams	TI-33323	8043

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EXAMINER	
BAYARD, EMMANUEL	
ART UNIT	**PAPER NUMBER**
2611	

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/026,319	WILLIAMS ET AL.	
	Examiner	Art Unit	
	Emmanuel Bayard	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This is in response to amendment filed on 4/4/06 in which claims 1 and 3-25 are pending. The applicant's amendments have been fully considered but they are moot based on the new ground of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3-8, 13-14 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Persson et al U.S. patent No 6,587,500 B1 in view of Fonte U.S. Patent No 5,815101.

As per claim 1, Persson et al teaches a method of detecting packets in a communications channel comprising: (a) sampling the communications channel at a first sampling rate, producing a sequence of samples (see figs.3, 6 elements 72, 204 and col.2, lines 26-30 and col.3, lines 2-5, 62-67); (b) correlating at least one sample of the sequence of samples (see figs.3, 6 elements X's, and col.3, lines 4-5 and col.3, lines 65-67 and col.5, lines 40-44) with one or more samples of the sequence of samples to generate a plurality of correlation results; computing a correlation (see figs.3, 6 see elements 76 or Sk, 206 and col.2, lines 33-35 and col.4, lines 20-21 and col.5, lines 40-48) value from the plurality of correlation results; (c) comparing the correlation result

with a threshold (see figs.3, 6 elements 77, 208 and col.2, lines 35-40, and col.4, lines 20-50 and col.5, lines 43-55).

However Persson et al does not teach sampling the channel at a second sampling rate based on the result of the comparison.

Fonte teaches sampling the channel at a second sampling rate based on the result of the comparison (see fig.5 element 60 and col.5, lines 40-50).

It would have been obvious to one of ordinary skill in the art to implement the teaching of Fonte into Persson as to re-sample the input signal at a different sampling rate so that comparisons against the two sampled signals could be performed as taught by Fonte (see col.5, lines 45-50).

As per claim 3,Persson et al teaches wherein the correlating step comprises correlating the sequence of samples with a reference sequence of samples stored in a memory (see col.2, lines 26-35 and col.4, lines 9-20, 50-66 and col.5, lines 20-25).

As per claim 4, Persson et al and Fonte in combination would teach, wherein the first sampling rate is sufficient to (recover) data encoded in the packet as to accurately determine the sampling rate of the incoming signal.

As per claim 5, Fonte teaches wherein the second sampling rate is greater than the first sampling rate (see col.4, lines 51-67). Furthermore implementing such teaching into Persson would have been obvious to one skilled in the art as to re-sample the input signal at a different sampling rate so that comparisons against the two sampled signals could be performed as taught by Fonte (see col.5, lines 45-50).

As per claim 6, Fonte teaches wherein the second sampling rate is an integer multiple of the first sampling rate (see col.4, lines 51-67). Furthermore implementing such teaching into Persson would have been obvious to one skilled in the art as to re-sample the input signal at a different sampling rate so that comparisons against the two sampled signals could be performed as taught by Fonte (see col.5, lines 45-50).

As per claim 7, Persson et al and Fonte in combination would teach wherein the second sampling rate is an integer multiple of a minimum sampling rate required to (recover) data encoded in the packet as to accurately determine the sampling rate of the incoming signal.

As per claim 8, Persson et al and Fonte in combination would teach wherein the second sampling step occurs only if the correlation result exceeds the threshold so that comparisons against the two sampled signals could be performed as taught by Fonte (see col.5, lines 45-50).

As per claim 13, Persson et al and Fonte in combination would teach wherein the correlation step is performed after a new sample is produced as to accurately compute the energy of the sample sequence with the lag N so that comparisons against the two sampled signals could be performed as taught by Fonte (see col.5, lines 45-50).

As per claim 14, Persson et al and Fonte in combination would teach wherein the correlation step is performed after a specified number of new samples are produced as to accurately compute the energy of the sample sequence with the lag N so that comparisons against the two sampled signals could be performed as taught by Fonte (see col.5, lines 45-50).

As per claim 22, Persson does teach wherein a first plurality of samples is correlated with one or more plurality of samples generate the plurality of correlation results (see col.5, lines 35-50).

As per claim 23, Persson does teach, wherein the sequence of samples is stored in a plurality of memory blocks and one or more of the plurality of memory blocks are correlated w1t11 each other to generate the plurality of correlation results (see col.4, lines 10-67 and col.5, lines 18-20).

As per claim 24, Persson does teach wherein a sample in a first memory block is correlated with a corresponding (see col.4, lines 10-67 and col.5, lines 18-20) sample in a second memory block to generate the correlation results

As per claim 24, Persson does teach wherein the computing the correlation value comprises: summing the plurality of correlation results (see fig.3 element Sigma or Z).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Persson et al U.S. patent No 6,587,500 B1 in view of Fonte U.S. Patent No 5,815101 and in further view of Miya U.S. Patent no 5,818,869.

As per claims 9 and 12, Persson and Fonte in combination teach all the features of the claimed invention except decoding the packet; transmitting modulated spreading codes is the same as the claimed (processing any data encoded in the packet) since a decoding step in achieved in the receiver

Miya et al does teach decoding the packet (see col.3, lines 43-50 and col.4, lines 62-67 and col.6, lines 11-15); transmitting modulated spreading codes is the same as the claimed (processing any data encoded in the packet) since a decoding step in achieved in the receiver (see col.2, lines 25-26 and col.3, lines 53-55) in the packet.

It would have been obvious to one of ordinary skill in the art to implement the teaching of Miya into Persson and Fonte combination as to accurately measure the BER of the sampling position as taught by Miya (see col.6, lines 6-20).

As per claim 10, Persson, Fonte and Miya in combination would teach wherein following the processing step, the method further comprising the step of changing the sampling rate back to the first sampling rate after the completion of processing the packet as to accurately measure the BER of the sampling position as taught by Miya (see col.6, lines 6-20).

As per claim 11, Persson, Fonte and Miya in combination would teach wherein following the processing step, the method further comprising the step of stopping the processing of the packet and changing the sampling rate back to the first sampling rate after determining an erroneous detection as to accurately measure the BER of the sampling position as taught by Miya (see col.6, lines 6-20).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 15-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Persson et al U.S. patent No 6,587,500 B1 in view of Miya et al U.S. Patent No 5,818,869 and in further view of Doi et al U.S. Patent No 5,870,594.

As per claims 15 and 19, Persson teaches a receiver for a communications system comprising: an antenna or Radio demodulator is the same as the claimed (signal detector) (see fig.3 element 70 and col.2, lines 6-14), the Radio demodulator (signal detector) containing circuitry to detect signals transmitted on a communications channel; a sampler (see figs.3, 6 elements 72, 204 and col.2, lines 26-30 and col.3, lines 2-5, 62-67) coupled to the Radio demodulator (signal detector), the sampler containing circuitry to sample the signals detected on the communications channel by the signal detector at a variable sampling rate and produce a sequence of samples, wherein the sampler samples the communications channel at a first sampling rate when attempting to detect a packet and at a second sampling rate when a packet has been detected (see col.3, lines 63-67 and col.4, lines 5-20); a correlator containing circuitry to correlate at least one sample of the sequence of samples (see figs.3, 6 elements X's, and col.3, lines 4-5 and col.3, lines 65-67 and col.5, lines 40-44) with one or more samples of the sequence of samples (see figs.10-11 clock samples element 103) to

generate a plurality of correlation results (see the two outputs of 105); computing a correlation (see figs.3, 6 see elements 76 or Sk, 206 and col.2, lines 33-35 and col.4, lines 20-21 and col.5, lines 40-48) value from the plurality of correlation results; a processor (see fig.3) coupled to the correlator and the sampler, the processor containing circuitry to detect the presence of a packet based on results produced by the correlator (c) by comparing the correlation result with a threshold (see figs.3, 6 elements 77, 208 and col.2, lines 35-40, and col.4, lines 20-50 and col.5, lines 43-55).

However Persson does not teach a processor to decode and process data contained in a packet transmitted on the communications channel, and to control the sampling rate of the sampler.

Miya teaches a processor to decode and process (see col.3, lines 43-50 and col.4, lines 62-67 and col.6, lines 11-15) data contained in a packet transmitted on the communications channel, and to control the sampling rate of the sampler (see figs. 10-11 feedback elements 110-103).

It would have been obvious to one of ordinary skill in the art to implement the teaching Miya into Persson as to accurately measure the BER of the sampling position as taught by Miya (see col.6, lines 6-20).

Persson and Miya et al in combination do not teach wherein the sampler comprising: a latch coupled to the signal detector, the latch containing circuitry to capture a signal value at a first input and produce a sample corresponding to the captured signal value at an output; and a sampling clock coupled to the latch and the

processor, the sampling clock containing circuitry to control the sampling rate of the sampler based on control information from the processor.

Doi et al teaches a sampler comprising a latch (see fig.1 element 105) coupled to the signal detector (see fig.1 element 106), the latch containing circuitry to capture a signal value at a first input and produce a sample corresponding to the captured signal value at an output (see col.2, lines 65-67 and col.3, lines 1-3 and col.5, lines 10-11); and a sampling clock (see fig.1 element 107 and col.5, lines 7-15) coupled to the latch and the processor, the sampling clock containing circuitry to control the sampling rate of the sampler based on control information from the processor.

It would have been obvious to one of ordinary skill in the art to implement the teaching of Doi into Persson and Miya et al as to control clock timing by detection of the deviation of the clock timing from a desired reference timing during both start-up and normal operations and using the result of the detection for applying feedback to the clock generator as taught by Doi (see col.1, lines 63-67).

As per claim16, Persson, Miya et al and Doi in combination would teach, wherein the processor changes the sampling rate back to the first sampling rate after the completed reception of the packet as to control clock timing by detection of the deviation of the clock timing from a desired reference timing during both start-up and normal operations and using the result of the detection for applying feedback to the clock generator as taught by Doi (see col.1, lines 63-67).

As per claim 17, Persson, Miya et al and Doi in combination would teach wherein the processor changes the sampling rate back to the first sampling rate after

the processor determines that the packet was destined for a different receiver as to control clock timing by detection of the deviation of the clock timing from a desired reference timing during both start-up and normal operations and using the result of the detection for applying feedback to the clock generator as taught by Doi (see col.1, lines 63-67).

As per claim 18, Persson, Miya et al and Doi in combination would teach wherein the processor changes the sampling rate back to the first sampling rate after determining an erroneous detection of the packet as to control clock timing by detection of the deviation of the clock timing from a desired reference timing during both start-up and normal operations and using the result of the detection for applying feedback to the clock generator as taught by Doi (see col.1, lines 63-67).

As per claim 20, Persson, Miya et al and Doi would teach wherein the signal detector is a sensor capable of detecting wirelessly transmitted signals as to accurately performing synchronization during the operation.

As per claim 21, Persson, Miya et al and Doi in combination would teach wherein the signal detector is a sensor capable of detecting signals transmitted on a wire-line communications channel as to accurately performing synchronization during the operation

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rajan U.S. Patent No 4,538,281 teaches an adaptive acquisition of multiple access codes.

Rouquette U.S. Patent No 5,142,507 teaches a Hydroacoustic ranging system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 571 272 3016. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM) Alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571 272 2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Emmanuel Bayard
Primary Examiner
Art Unit 2611

6/7/06

EMMANUEL BAYARD
PRIMARY EXAMINER